BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

AMENDMENT(S) TO THE CLAIMS

1. (currently amended): An integrated circuit, comprising:

one or more components that receive a distributed voltage; and

a voltage driver that produces a compensated voltage;

wherein the compensated voltage ~~being~~ is distributed to form the distributed voltage at the one or more components, ~~wherein~~ and the distributed voltage is degraded relative to the compensated voltage; and

wherein the voltage driver is responsive to feedback derived from the distributed voltage to adjust the compensated voltage so that the distributed voltage is approximately equal to a nominal voltage.

A1

2. (original): An integrated circuit as recited in claim 1, wherein said one or more components have input characteristics that contribute to the degradation of the distributed voltage.

3. (original): An integrated circuit as recited in claim 1, wherein said distribution contributes to the degradation of the distributed voltage.

4. (original): An integrated circuit as recited in claim 1, wherein:

said distribution contributes to the degradation of the distributed voltage; and

the compensated voltage is distributed over impedance-matched conductors to form the distributed voltage at the one or more components.

5. (original): An integrated circuit as recited in claim 1, wherein said one or more components comprise data receivers that evaluate data signals relative to the distributed voltage.

6. (original): An integrated circuit as recited in claim 1, further comprising a feedback component that evaluates the distributed voltage relative to the nominal voltage to derive said feedback.

7. (original): An integrated circuit as recited in claim , wherein:

said one or more components have input characteristics that contribute to the degradation of the distributed voltage at the data receivers;

further comprising a feedback component that evaluates the distributed voltage relative to the nominal voltage to derive said feedback, wherein the feedback receiver has input characteristics similar to those of the one or more components to contribute similar degradation to the distributed voltage at the feedback component.

8. (original): An integrated circuit as recited in claim , wherein:

the integrated circuit further comprises a feedback component that evaluates the distributed voltage relative to the nominal voltage to derive said feedback;

said distribution contributes to the degradation of the distributed voltage; and

the distributed voltage is routed to result in similar degradations at the one or more components and the feedback component.

9. (original): An integrated circuit as recited in claim 1, further comprising:

a feedback component that evaluates the distributed voltage relative to the nominal voltage to derive said feedback;

wherein the voltage driver has a variable gain that is configured to increase in response to the feedback when the distributed voltage is less than the nominal voltage and to decrease in response to the feedback when the distributed voltage is greater than the nominal voltage.

10. (original): An integrated circuit as recited in claim 1, wherein the voltage driver has a variable gain that is controlled by a digital value.

11. (original): An integrated circuit as recited in claim 1, wherein the voltage driver has a variable gain that is controlled by a digital value, the integrated circuit further comprising a register that is configurable to store the digital value and to provide the digital value to the voltage driver.

12. (original): An integrated circuit as recited in claim 1, wherein the voltage driver has a variable gain that is controlled by a digital value, the integrated circuit further comprising a register that is configurable to store the digital value and to provide the digital value to the voltage driver, the register being readable and writable.

13. (original): An integrated circuit as recited in claim 1, wherein the voltage driver has a variable gain that is controlled by a digital value, further comprising a counter that produces the digital value, wherein the counter is responsive to the feedback to increment and decrement the digital value.

14. (currently amended): An integrated circuit as recited in claim 1, wherein the voltage driver has a variable gain that is controlled by a digital value, further comprising a counter that produces the digital value, wherein the counter is responsive to the feedback during an initialization period to increment and decrement the digital value, and the digital value ~~remaining~~ remains constant during an operational period following the initialization period.

15. (original): An integrated circuit as recited in claim 1, wherein the integrated circuit comprises a memory device.

16. (original): An integrated circuit as recited in claim 1, wherein the integrated circuit is a memory device that further comprises a plurality of memory storage cells.

17. (currently amended): An integrated circuit, comprising:

~~a~~ one or more data receivers that evaluate one or more corresponding data signals relative to a distributed reference voltage; and

a reference voltage driver that produces a compensated reference voltage~~;~~;

wherein the compensated reference voltage ~~being~~ is distributed to form the distributed reference voltage, ~~wherein~~ and the distributed reference voltage is degraded relative to the compensated reference voltage; and

wherein the reference voltage driver has a variable gain that increases when the distributed reference voltage is less than a nominal reference voltage and decreases when the distributed reference voltage is greater than the nominal reference voltage.

18. (original): An integrated circuit as recited in claim 17, wherein the reference voltage driver is configured so that its gain is set during an initialization period and remains constant during a subsequent operational period.

19. (original): An integrated circuit as recited in claim 17, wherein the variable gain is controlled by a digital value.

20. (currently amended): An integrated circuit as recited in claim ~~1~~17, wherein the variable gain is controlled by a digital value, and the integrated circuit further ~~comprising~~ comprises a register that is configurable to store the digital value and to provide the digital value to the reference voltage driver.

21. (currently amended): An integrated circuit as recited in claim ~~1~~17, wherein the variable gain is controlled by a digital value, and the integrated circuit further ~~comprising~~ comprises a register that is configurable to store the digital value and to provide the digital value to the reference voltage driver~~,~~; and wherein the register ~~being~~ is readable and writable.

22. (original): An integrated circuit as recited in claim 17, wherein the variable gain is controlled by a digital value, further comprising a counter that produces the digital value, wherein the counter increments or decrements the digital value depending on the relationship of the distributed reference voltage relative to the nominal reference voltage.

23. (currently amended): An integrated circuit as recited in claim 17, wherein the variable gain is controlled by a digital value, and the integrated circuit further comprises a counter that produces the digital value~~,~~; wherein the counter is configured to increase and decrease the digital value during an initialization period depending on the relationship of the distributed reference voltage and the nominal reference voltage, and the digital value ~~remaining~~ remains constant during an operational period following the initialization period.

24. (original): An integrated circuit as recited in claim 17, further comprising a capacitive charge pump that controls the gain of the reference voltage driver.

25. (currently amended): An integrated circuit as recited in claim 17, further comprising a feedback component that evaluates the distributed reference voltage relative to the nominal reference voltage to generate a feedback signal, wherein the reference voltage driver ~~being response~~ is responsive to the feedback signal to increase and decrease the variable gain.

26. (currently amended): An integrated circuit as recited in claim 17, further comprising:

a feedback component that evaluates the distributed reference voltage relative to the nominal reference voltage to generate a feedback signal;

a charge pump that produces a control voltage to establish the gain of the reference voltage driver;

wherein the charge pump ~~being~~ is responsive to the feedback signal to increase and decrease the variable gain.

27. (original): An integrated circuit as recited in claim 17, wherein the compensated reference voltage is distributed over impedance-matched conductors to form the distributed reference voltage at the one or more data receivers.

28. (currently amended): An integrated circuit as recited in claim 17, further comprising:

a feedback component that evaluates the distributed reference voltage relative to the nominal reference voltage to generate a feedback signal, wherein the reference voltage driver ~~being response~~ is responsive to the feedback signal to increase and decrease the variable gain;

wherein the feedback component incorporates a low-pass filter.

29. (original): An integrated circuit as recited in claim 17, wherein the one or more data receivers comprise a plurality of the data receivers, and wherein the data receivers have similar input characteristics and the distributed reference voltage is routed similarly to each of the data receivers to result in similar degradation of the distributed reference voltage at each of the data receivers.

30. (currently amended): An integrated circuit as recited in claim 17, further comprising:

a feedback receiver that evaluates the distributed reference voltage relative to the nominal reference voltage to generate a feedback signal, wherein the reference voltage driver ~~being response~~ is responsive to the feedback signal to increase and decrease the variable gain;

wherein the data and feedback receivers have similar input characteristics and the distributed reference voltage is routed similarly to the data and feedback receivers to result in similar degradation of the distributed reference voltage at the data and feedback receivers.

31. (currently amended): An integrated circuit as recited in claim 17, further comprising:

a feedback receiver that evaluates the distributed reference voltage relative to the nominal reference voltage to generate a feedback signal, wherein the reference voltage driver ~~being response~~ is responsive to the feedback signal to increase and decrease the variabl gain;

wherein the data and feedback receivers have similar input characteristics and the distributed reference voltage is routed similarly to the data and feedback receivers to result in similar degradation of the distributed reference voltage at the data and feedback receivers; and

wherein the feedback receiver incorporates a low-pass filter that does not significantly affect the input characteristics of the feedback receiver.

32. (original): An integrated circuit as recited in claim 17, wherein the integrated circuit is a memory device that further comprises a plurality of memory storage cells.

33. (currently amended): An integrated circuit, comprising:

a plurality of data receivers that evaluate corresponding data signals relative to a distributed reference voltage;

a feedback receiver that evaluates the distributed reference voltage relative to a nominal reference voltage to produce a feedback signal;

a reference voltage driver that produces a compensated reference voltage;

wherein the compensated reference voltage ~~being~~ is routed on the integrated circuit to form the distributed reference voltage at the data and feedback receivers, ~~wherein~~ and the input characteristics of the data and feedback receivers cause a voltage change in the distributed reference voltage at each receiver relative to the compensated reference voltage;

wherein the data and feedback receivers ~~having~~ have similar input characteristics so that said relative voltage change in the distributed reference voltage is approximately the same at each of the data and feedback receivers;

an increment/decrement component that produces a digital value in response to the feedback signal, wherein the increment/decrement component ~~being~~ is configured to increment and decrement the digital value depending on the relationship of the distributed reference voltage and the nominal reference voltage as indicated by the feedback signal; and

wherein the reference voltage driver has a variable gain that is established by the digital value.

34. (original): An integrated circuit as recited in claim 33, wherein the compensated reference voltage is distributed over impedance-matched conductors to form the distributed reference voltage at the data and feedback receivers.

35. (original): An integrated circuit as recited in claim 33, wherein the increment/decrement component is enabled during an initialization period and the digital value remains constant during a subsequent operational period.

36. (original): An integrated circuit as recited in claim 33, further comprising a register that is configurable to store the digital value and to provide the digital value to the reference voltage driver.

37. (currently amended): An integrated circuit as recited in claim 33, further comprising a register that is configurable to store the digital value and to provide the digital value to the reference voltage driver, wherein the register ~~being~~ is readable and writable.

38. (original): An integrated circuit as recited in claim 33, furth r comprising a digitally controllable variable resistor that cont ls the gain of the reference voltage driver.

39. (original): An integrated circuit as recited in cl m 33, wherein the feedback receiver comprises a low-pass filter that does not sig ficantly affect the input characteristics of the feedback receiver.

40. (original): An integrated circuit as recited in cl m 33, wherein the distributed reference voltage is routed similarly to the data an feedback receivers so that said relative voltage change in the distributed r erence voltage is approximately the same at each of the data and feedback receiv rs.

41. (original): An integrated circuit as recited in cla 33, wherein:

the distributed reference voltage is routed similarly to t data and feedback receivers so that said relative voltage change in the distributed eference voltage is approximately the same at each of the data and feedback receiv rs; and

the feedback receiver comprises a low-pass filter that d s not significantly affect the input characteristics of the feedback receiver.

42. (original): An integrated circuit as recited in cl m 33, wherein the integrated circuit is a memory device that further comprises a urality of memory storage cells.

43. (currently amended): An integrated circuit, comprising:

receiver means for evaluating a plurality of data signals relative to a distributed reference voltage;

feedback means for evaluating the distributed reference voltage relative to a nominal reference voltage to produce a feedback signal;

driver means having a variable gain for producing a compensated reference voltage;

routing means for routing the compensated reference voltage on the integrated circuit to form the distributed reference voltage at the receiver and feedback means~~,~~;

wherein the input characteristics of the receiver and feedback means cause a voltage change in the distributed reference voltage at the receiver and feedback means relative to the compensated reference voltage;

wherein the receiver and feedback means ~~having~~ have similar input characteristics so that said relative voltage change in the distributed reference voltage is approximately the same at each of the receiver and feedback means; and

gain control means for controlling the gain of the driver means in response to the feedback signal so that the distributed reference voltage is approximately equal to the nominal reference voltage.

44. (original): An integrated circuit as recited in claim 43, wherein the gain control means comprises a counter that produces a digital value, wherein the counter is responsive to the feedback to increment and decrement the digital value.

45. (currently amended): An integrated circuit as recited in claim 43, wherein the gain control means comprises a register that is configurable to store a digital value, and wherein the variable gain of the driver means ~~being~~ is responsive to the digital value.

46. (currently amended): An integrated circuit as recited in claim 43, wherein the gain control means comprises a register that is configurable to store a digital value, the variable gain of the driver means ~~being~~ is responsive to the digital value, and the register ~~being~~ is readable and writable.

47. (original): An integrated circuit as recited in claim 43, wherein the compensated reference voltage is distributed over impedance-matched conductors to form the distributed reference voltage at the receiver and feedback means.

48. (original): An integrated circuit as recited in claim 43, wherein the gain control means is enabled during an initialization period to adjust the gain of the driver means, wherein the gain control means is configured to maintain the gain of the driver means constant during a subsequent operational period.

49. (original): An integrated circuit as recited in claim 43, wherein the gain control means comprises a digitally controllable variable resistor.

50. (original): An integrated circuit as recited in claim 43, wherein the distributed reference voltage is routed similarly to the receiver and feedback means so that said relative voltage change in the distributed reference voltage is approximately the same at each of the receiver and feedback means.

51. (currently amended): An integrated circuit as recited in claim 43, wherein:

~~wherein~~ the distributed reference voltage is routed similarly to the receiver and feedback means so that said relative voltage change in the distributed reference voltage is approximately the same at each of the receiver and feedback means; and

the feedback means comprises a low-pass filter that does not significantly affect the input characteristics of the op-amp.

52. (original): An integrated circuit as recited in claim 43, wherein the integrated circuit is a memory device that further comprises a plurality of memory storage cells.

53. (currently amended): A memory device comprising:

a plurality of memory storage cells;

a plurality of data receivers that evaluate binary data signals with reference to a distributed reference voltage;

a feedback receiver that evaluates the distributed reference voltage relative to a nominal referenc voltage to produce a feedback signal;

a reference voltage driver that produces a compensated reference voltage;

wherein the compensated reference voltage ~~being~~ is routed on the memory device to form the distributed reference voltage at the data and feedback receivers, ~~wherein~~ and the input characteristics of the data and feedback receivers cause a voltage change in the distributed reference voltage at each receiver relative to the compensated reference voltage;

wherein the data and feedback receivers ~~having~~ have similar input characteristics so that said relative voltage change in the distributed reference voltage is approximately the same at each of the data and feedback receivers; and

wherein the reference voltage driver has a variable gain that is configurable to increase in response to the feedback signal when the distributed reference voltage is less than the nominal reference voltage and to decrease in response to the feedback signal when the distributed reference voltage is greater than the nominal reference voltage.

54. (original): A memory device as recited in claim 53, wherein the compensated reference voltage is distributed over impedance-matched conductors to form the distributed reference voltage at the data and feedback receivers.

55. (original): A memory device as recited in claim 53, wherein the variable gain of the reference voltage driver is controlled by a digital value, the integrated circuit further comprising a register that is configurable to store the digital value and to provide the digital value to the reference voltage driver.

56. (currently amended): A memory device as recited in claim 53, wherein the variable gain of the reference voltage driver is controlled by a digital value, and the integrated circuit further ~~comprising~~ comprises a register that is configurable to store the digital value and to provide the digital value to the reference voltage driver;; and wherein the register ~~being~~ is readable and writable.

57. (original): A memory device as recited in claim 53, wherein the gain of the reference voltage driver remains constant during an operational period that follows an initialization period.

58. (original): A memory device as recited in claim 53, wherein the feedback receiver comprises a low-pass filter that does not significantly affect the input characteristics of the feedback receiver.

59. (original): A memory device as recited in claim 53, wherein:

the distributed reference voltage is routed similarly to the data and feedback receivers so that said relative voltage change in the distributed reference voltage is approximately the same at each of the data and feedback receivers; and

the feedback receiver comprises a low-pass filter that does not significantly affect the input characteristics of the feedback receiver.

60. (currently amended): A method comprising:

evaluating a plurality of signals relative to a distributed voltage;

amplifying a nominal voltage by a variable gain to produc a compensated reference voltage;

routing the compensated reference voltage over resistive conductors to form the distributed voltage;

increasing the variable gain when the distributed voltage is less than the nominal voltage; and

decreasing the variable gain when the distributed voltage is greater than the nominal voltage.

61. (original): A method as recited in claim 60, wherein the routing comprises routing the compensated reference voltage over impedance-matched resistive conductors to form the distributed voltage.

62. (original): A method as recited in claim 60, further comprising:

maintaining the variable gain at a constant value during an operational period following an initialization period.

63. (new): An integrated circuit, comprising:

a reference voltage driver that has a variable gain and produces a compensated reference voltage; and

a plurality of receivers that evaluate signals relative to a distributed reference voltage, a particular receiver of the plurality of receivers capable of evaluating a nominal reference voltage signal relative to the distributed reference voltage to produce a feedback signal;

wherein the compensated reference voltage is distributed to form the distributed ref rence voltage, and the distributed reference voltage is degraded relative to the compensated reference voltage; and

wherein the reference voltage driver is responsive to the feedback signal such that the variable gain increases when the distributed reference voltage is less than the nominal reference voltage signal and decreases when the distributed reference voltage is greater than the nominal reference voltage signal.

64. (new): An integrated circuit as recited in claim 63, wherein the particular receiver is useable during an initialization period to evaluate the nominal reference voltage signal relative to the distributed reference voltage to produce the feedback signal and is unused during an operational period.

65. (new): An integrated circuit as recited in claim 63, wherein the particular receiver is useable during an initialization period to evaluate the nominal reference voltage signal relative to the distributed reference voltage to produce the feedback signal and is useable during an operational period to evaluate a data signal relative to the distributed reference voltage.

66. (new): An integrated circuit as recited in claim 63, wherein the compensated reference voltage is distributed over impedance-matched conductors to form the distributed reference voltage at the plurality of receivers.

67. (new): An integrated circuit as recited in claim 63, wherein the plurality of receivers have input characteristics that cause a voltage change in the distributed reference voltage at each receiver relative to the compensated reference voltage; and wherein the input characteristics are similar such that the relative voltage change in the distributed reference voltage is approximately the same at each receiver of the plurality of receivers.

68. (new): An integrated circuit as recited in claim 63, wherein the particular receiver includes a low-pass filter that does not significantly affect input characteristics of the particular receiver.

69. (new): An integrated circuit as recited in claim 63, further comprising memory storage cells.

70. (new): An integrated circuit as recited in claim 63, wherein the variable gain of the reference voltage driver is controlled by a digital value.

71. (new): An integrated circuit as recited in claim 63, further comprising a register that is configurable to store a digital value; wherein the variable gain of the reference voltage driver is controllable by the digital value of the register.

72. (new): An integrated circuit as recited in claim 63, wherein the reference voltage driver includes a counter that can change the variable gain of the reference voltage driver responsive to the feedback signal.

73. (new): An integrated circuit as recited in claim 63, further comprising a charge pump that produces a control voltage to establish the variable gain of the reference voltage driver; wherein the charge pump is responsive to the feedback signal to cause the variable gain to increase or decrease.